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WHAT THERE IS TO SEE
in the
UNITED STATES DEPARTMENT OF AGRICULTURE

Washington, D. C.

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Washington, D. C.

COMPILED BY

PRESS SERVICE

1924

Visitors are welcome at the U. S. Department of Agriculture and members of its staff are glad to give information and to show people the work being carried on. This booklet is intended for visitors who want to know where things of general interest are to be found. Some visitors have special questions they want to ask or problems they want to discuss. Inquiry at the office of the Chief of the bureau concerned will bring the inquirer to the special division or office dealing with the subject. If you do not see what you are looking for in this book--ask for it.

DIRECTORY

Secretary of Agriculture
Hon. Henry C. Wallace (p. 9).....Admin. Bldg.

Assistant Secretary
Hon. H. M. Gore (p. 9).....Admin. Bldg.

Director of Scientific Work
E. D. Ball (p. 9).....Admin. Bldg.

Director of Regulatory Work
Walter G. Campbell (p. 9).....Admin. Bldg.

Director of Extension Work
C. W. Warburton (p. 29).....220, 14th St.

Packers and Stockyards and
Grain Futures Administration (p. 9)
Chester Morrill, Asst. to Secty.....Admin. Bldg.

Weather Bureau
C. F. Marvin, Chief (p.40)..24th and M Sts. NW.

Forest Service
W. B. Greeley, Chief (p. 42).....930 F St. NW.

Bureau of Animal Industry
J. R. Mohler, Chief (p. 12).....East Wing

Bureau of Plant Industry
W. A. Taylor, Chief (p. 15).....West Wing

Bureau of Chemistry
Charles A. Browne, Acting Chief (p. 23)216, 13th St. SW.

Bureau of Soils
Milton Whitney, Chief (p. 12).....East Wing

Bureau of Entomology
L. O. Howard, Chief (p. 10).....Entomology Bldg.

Bureau of Biological Survey
E. W. Nelson, Chief (p. 18).....Bieber Bldg. 1358 B St. SW.

Office of Experiment Stations
E. W. Allen, Chief (p. 28).....220, 14th St.

Bureau of Public Roads
T. H. MacDonald, Chief (p. 43).....513, 14th St. NW.

Bureau of Home Economics
Louise Stanley, Chief (p. 28).....220, 14th St.

Bureau of Agricultural Economics
H. C. Taylor, Chief (p. 20).....Bieber Bldg. 1358 B St. SW.

Office of Cooperative Extension Work
C. B. Smith, Chief (p. 29).....220, 14th St.

Federal Horticultural Board
C. L. Marlatt, Chairman (p. 10).Entomology Bldg.

Office of Publications
L. J. Haynes, Chief (p. 27).....215, 13th St.

Insecticide and Fungicide Board
J. K. Haywood, Chairman (p. 33).....Olive Bldg.
220 13th St. SW.

Fixed Nitrogen Laboratory
F. C. Cottrell, Director (p. 45)...American University.

Department Library
Claribel R. Barnett, Librarian(p.17)Bieber Bldg.
1358 B St. SW.

Office of the Solicitor
R. W. Williams, Solicitor (p. 17) 1316 B St. SW.

Chief Clerk of the department
R. M. Reese (p. 9).....Admin. Bldg.

The Department of Agriculture is the administrative agency charged with the duty of fostering agriculture in the United States. Its work covers every phase of agricultural interest and endeavor. It was established as a department in 1889. At that time the entire personnel could be housed in the Main Building. The personnel now numbers in all about 19,000; 4,600 of whom are engaged in Washington. It occupies a floor space in Washington of over a million square feet. The depart-

ment has representatives in all sections of the United States and in foreign countries.

In addition to the buildings in and around the original reservation, several important bureaus are located elsewhere in the city: The Weather Bureau is located at 24th and M Sts. NW., the Bureau of Public Roads at 513, 14th St. NW., the Forest Service at 930 F St. NW., and the Fixed Nitrogen Research Laboratory at American University. The Arlington Experimental and the Beltsville, Md., Farms are the largest outlying stations in the immediate vicinity of Washington.

THE GROUNDS

(A map showing the location of the grounds and buildings will be found on the middle page of this pamphlet)

The grounds of the U. S. Department of Agriculture include about 40 acres, constituting that portion of The Mall which is under the control of the Secretary of Agriculture. They were laid out and planted soon after the close of the Civil War by the late William Saunders, who for many years was horticulturist of the department. Mr. Saunders introduced the famous Washington Navel orange and numerous other rare and valuable plants. Very early in the history of the department, Mr. Saunders began the introduction of hardy shrubs and trees from foreign countries and the planting of these in groups on the department grounds. He also brought together and planted on the grounds many rare native species of trees and shrubs.

Special attention is called to the groups of oaks, magnolias, and elms, all of which are indicated on the map. The entrance avenue of 90 fifty-year-old Ginkgo trees constitutes one of the unusual features of the grounds, and one of the most striking examples of this species in the United States.

East of the brick Administration Building is a section of a giant redwood tree which was on exhibition at the Chicago World's Fair in 1893. Three memorial trees have been planted on the grounds, an elm tree planted by Secretary J. Sterling Morton, founder of Arbor Day, in April, 1894, located among the elms on the Twelfth Street side of the grounds; a willow oak in memory of the late J. M. Rusk (Secretary of Agriculture in 1889-1893), planted in April, 1901, by the late James Wilson, then Secretary of Agriculture, near the cement walk running northwesterly from the Administration Building to the greenhouses, and a white oak tree on Piney Hill near-by, planted March 26, 1919, by the then Secretary of Agriculture, David F. Houston, as a memorial to former employees of the department who lost their lives in the World War. The grounds are under the supervision of the Bureau of Plant Industry.

THE GREENHOUSES

The greenhouses at the right of the main entrance to the grounds (13th and B Sts. NW.) (west greenhouses on the map) are used for investigational work by the Bureau of Plant Industry. Those on the left (east greenhouses on the map) are used for the pathological investigations of the same bureau, and most of

them are closed to the public because of the danger of spreading plant diseases.

The right-hand greenhouses are numbered from 1 to 21, No. 21 being the nearest to the avenue of Ginkgo trees leading up to the Administration Building. This greenhouse contains a collection of many varieties of vineyard grapes, from the so-called raisin grape to the best table varieties. It is most interesting in the fall when the vines are in fruit.

The famous Washington Navel orange tree is in greenhouse No. 18, which also contains a collection of commercial varieties of citrus fruits. The Washington Navel orange tree is one of the two oldest known survivors of those trees budded directly from the department importation from Bahia, Brazil, in 1870. From that importation have descended practically all of the trees of this variety now growing in this country, the crop of which in California alone now averages approximately 8,400,000 boxes annually, with a maximum production in one year of 13,000,000 boxes. The other surviving old tree is at Riverside, Calif.

The rose house which contains a collection of standard and seedling hybrid teas, is No. 10. The two houses numbered 13 and 14 contain standard and seedling carnations. The extensive cactus collection of the Department of Agriculture is in greenhouse No. 7. This collection consists of several hundred species and has formed a basis for many studies of this family. The annual chrysanthemum and amaryllis shows are held in greenhouse No. 9. The dates of these shows are announced in the local newspapers. Greenhouse No.

6 contains a brilliant collection of tropical foliage plants, some of which are used in the beds on the department grounds in the summer. Sometimes a Holy Ghost flower (Peristeria elata) can be seen there in bloom. There are some unusual plants in greenhouse No. 2, and greenhouse No. 1 is given over to the study of blueberries and other acid soil plants.

The experimental work with plant cancer is carried on in pathological greenhouse No. 2, on the left side of the Ginkgo avenue, Greenhouse No. 6 on the left range of houses is the plant quarantine house. Here the seeds and plants brought in by the Office of Foreign Seed and Plant Introduction from all parts of the world are detained under quarantine to prevent the introduction of dangerous insects and diseases. Importations are studied and examined by officials.

THE ADMINISTRATION BUILDING

As you enter the Administration Building (No. 1 on the map) the offices of the Secretary of Agriculture, Hon. H. C. Wallace, are at the right and those of the Assistant Secretary, Hon. H. M. Gore, opposite. The offices of the Director of Scientific Work, Dr. E. D. Ball, and the Director of Regulatory Work, Mr. W. G. Campbell, are to be found on the left side of the corridor. The office of the Chief Clerk, R. M. Reese, is on the first floor across the corridor to the left. On the second floor of this building are the headquarters from which the Packers and Stockyards Act, and the Grain Futures Act are administered (Chester Morrill in charge.) The Office of Inspection is on the third floor of this building. The Main

Building of the department has housed every Secretary from Norman J. Coleman (1885-1889) to the present Secretary, Hon. Henry C. Wallace, who assumed office in 1921.

THE ENTOMOLOGY BUILDING

Bureau of Entomology
Federal Horticultural Board

Back of the Main Building and a little to the left is the second building erected for the use of the department (No. 2 on the map.) This is where the main offices of the BUREAU OF ENTOMOLOGY and of the FEDERAL HORTICULTURAL BOARD are located. The Bureau of Entomology, Dr. L. O. Howard, Chief, studies insects in their relation to agriculture. The Federal Horticultural Board, Dr. C. L. Marlatt, Chairman, assists in the enforcement of the plant quarantine act of August 20, 1912.

Information as to the Bureau of Entomology can be obtained from the office of the chief clerk at the right of the entrance. Books and other literature dealing with various phases of entomology may be found in the library on the first floor.

Insectaries of various kinds are located at the back of this building, but except for the collections of scale insects, aphids, and white flies, mounted on microscopic slides which are of interest to technical workers only, there is little to see. In a small garden vegetables and ornamental plants are raised in connection with studies of insects. Two small laboratories on the right-hand side are devoted to the study of insects affecting vegetables and ornamental plants. Some-

times in the summer a few silkworms are raised in the first laboratory on the left, for use in experiments on the value and effect of various substances as insecticides. In addition, to the space occupied by the Bureau of Entomology in this building, a number of specialists in the employ of the bureau occupy rooms in the New National Museum in the space assigned to the Division of Insects. A small experiment station is maintained at Sligo, Md., a bee culture laboratory at Somerset, Md., and a forest insect station at East Falls Church, Va.

The executive offices of the Federal Horticultural Board and the room in which the board meetings are held are on the second floor of the Entomology Building, but much of the work of the board is carried on in the inspection and quarantine house at 12th and B Sts. NW., and in "F" Building. (See p. 39)

PRESS SERVICE

The small white building (No. 3 on the map) directly behind the Main Building contains a part of the Press Service, and though there is no exhibit of any sort to be found there, visitors interested in any phase of press work are welcome there at all times.

THE EAST WING

Bureau of Animal Industry
Bureau of Soils
Experimental Kitchen and Calorimeter Laboratory
of the Bureau of Home Economics

The large white buildings on the reservation are known simply as the East and West Wings, because they were built to form part of what will eventually be a large building for departmental purposes. The East Wing (No. 4 on the map) contains the main offices of the BUREAU OF ANIMAL INDUSTRY, Dr. John R. Mohler, Chief, room 225; the BUREAU OF SOILS, Dr. Milton Whitney, Chief, room 119; the Experimental Kitchen and Calorimeter Laboratory of the BUREAU OF HOME ECONOMICS, rooms 48 and 50, and the DIVISION OF ACCOUNTS AND DISBURSEMENTS, room 102.

The Bureau of Animal Industry studies and distributes information regarding livestock products, and conducts meat inspection and animal quarantine work. The Bureau of Soils surveys and maps the soils, and investigates the fertilizer resources of the country.

The offices of the Bureau of Soils are at the end of the corridor on the first floor. No exhibits of any kind can be seen here but anyone interested in the questions involving soils or fertilizer problems should inquire at room 118. Much of the work of the Bureau of Soils is done in Building "F" (See p.37). Fertilizer and other experiments are carried on at the Arlington Farm.

For special information regarding the work of the Bureau of Animal Industry, inquiry should be made at the office of the chief. Inquiry for

the publications of that bureau should be made at the Editorial Office, room 21, 1350 B St. SW.

Along the corridor of the second floor of the East Wing is an exhibit of pathological specimens of animal parasites and of photographs of livestock.

The head laboratory of meat inspection work of the United States is room 244. Ingredients and samples of materials used in meat packing are tested in these laboratories and water examinations are made. It is of interest to observe the thoroughness with which every phase of the chemistry of meat packing is investigated in these laboratories. Six similar laboratories are located throughout the United States. They are at New York, Chicago, St.Louis, Kansas City, Omaha, and San Francisco. The headquarters of the meat inspection work is in Building "F" (See p.36).

The hookworm work of the Bureau of Animal Industry has been carried on by the Zoological Division, which has its headquarters in room 233. This division also studies other animal parasites. Sheep parasites are being studied at the experimental station at Vienna, Va. Those interested can obtain information or a letter of introduction to the officers in charge of this station, room 233. The changes in the tissues of animals resulting from poisonous plants are being studied in room 209.

On the corridor of the third floor are many jars of specimens which show various animal diseases. These were all obtained from condemned animals from the stockyards. It is of interest to note that because of the fact that they are treated by an unusual process the specimens are

preserved in their natural colors.

The headquarters of the Biochemic Division of the bureau is also on the third floor of this building. Tuberculin is manufactured by this division, 16,000 flasks being used in its preparation. Food work with vitamines is also carried on by this division. Those interested should inquire at room 342.

The headquarters of the Dairy Division of the Bureau of Animal Industry are in room 24, in the basement of the building. Posters and charts used to encourage milk consumption and charts showing the distribution of purebred cattle can be seen there. The laboratories are on the top floor. At certain times in the day machinery used in various phases of dairy manufacturing can be seen here in operation on a small scale. In room 406 the process of making ice cream by machinery can be seen at frequent intervals. Cheese is made daily in room 408, and in room 414, milk is condensed on a small scale. An X-ray room in which cheese making is studied is located at the end of the corridor. Swiss cheese cultures are produced in room 447, according to a special method devised in the department. Room 440 is a cheese-curing room where varieties of cheeses are stored under suitable conditions and cured. See also Building "F" (p.36), 1350 B St. SW. (p.17), Beltsville (p.48), and Bethesda (p.48).

THE WEST WING

Bureau of Plant Industry

The West Wing (No. 5 on the map) is given over entirely to the BUREAU OF PLANT INDUSTRY. Certain features of the Washington work of this bureau are located in eight other buildings. Detailed information regarding the bureau may be had at the office of the chief, Dr. W. A. Taylor, room 206.

This bureau investigates problems relating to plants and plant industries. Among these may be mentioned the improvement of crop plants by breeding and selection, such as wheat, corn and other cereals and forage crops; cotton, vegetables and fruits; the determination of the causes and development of methods of control of destructive diseases affecting cereals and forage crops, cotton, fruits, vegetables, forest and ornamental trees, and other plants of economic importance; the development of improved cultural methods and of more effective methods of utilizing such perishable crops as fruits and vegetables to reduce waste in times of surplus. The introduction of potentially important new crops from foreign countries is another feature of its work.

The Bureau of Plant Industry administers the Seed Importation Act under which foreign grown forage crop seeds of low viability, or containing seeds of noxious weeds, are prohibited entry to the United States. It is conducting important cooperative campaigns for the control of the destructive black stem rust of wheat and other cereals in 13 leading wheat-growing States of the upper Mississippi Valley and Great Lakes regions, through eradication of the common barberry which

is the host plant responsible for the epidemic spread of the disease in seasons when climatic conditions favor it.

The bureau is also conducting a cooperative educational campaign for the control of the blister rust disease of white pine trees in the New England States and those of the Great Lakes and Pacific Northwest regions. It is cooperating with the authorities of the citrus-growing States in the eradication of the destructive citrus canker disease.

While the work of the bureau centers in Washington, much of it is located in the representative agricultural regions of the country at field stations and laboratories maintained by the department or in cooperation with the agricultural experiment stations, State departments of agriculture, and similar activities. No exhibits can be seen in the laboratories of the West Wing. It maintains the department grounds and greenhouses in Washington; also Arlington Farm, (see p.46), across the Potomac in Virginia, where numerous investigational activities of this and other bureaus of the department are prosecuted. See also Foreign Seed and Plant Introduction in Auditors Building; Horticultural and Pomological Investigations at No. 220 14th St. SW. (see p.31); Cereal Investigations, at 1306 B St. SW. (see p.16); and Forage Crop Investigations, in Building "F" (See p.36) on seventh St., SW.

1306 B STREET SOUTHWEST

Cereal Investigations

At 1306 B St. SW., (No. 6 on the map), the CEREAL INVESTIGATIONS of the BUREAU OF PLANT IN-

DUSTRY are carried on. A large panel showing colored bromide enlargements of some black and white illustrations of cereal production, barberry eradication, corn root, stalk and ear rots, is on display in the corridor of the first floor.

The OFFICE OF THE SOLICITOR of the department is located at 1316 B St. SW. (No. 8 on the map). This office acts as legal advisor to the department, conducts its legal work, and represents it in all matters requiring legal action.

The BUREAU OF ANIMAL INDUSTRY EDITORIAL OFFICES and the work of the Virus Serum Control Work are located in the building at 1350 B Sts. SW. (No. 9 on the map). The Virus Serum Work is on the first floor and the Editorial Offices on the second floor.

THE BIEBER BUILDING
1358 B Street Southwest

Agricultural Economics
Biological Survey
Department Library

Two bureaus, Agricultural Economics and Biological Survey, and the Department Library, are located in the Bieber Building, 1358 B St. SW. (No. 10 on the map).

The LIBRARY OF THE DEPARTMENT, Miss Claribel R. Barnett, Librarian, occupies the first floor and a large part of the basement. It contains approximately 165,000 books and pamphlets including an extensive collection on agriculture, a large and representative collection on the sciences related to agriculture and a good collection of standard reference books. Periodicals

currently received number 3,000 including the agricultural, scientific and technical journals not only of this country, but also of foreign countries. A dictionary catalogue is kept on cards which number about 450,000. A detailed card index of all department publications is also on file in the library. Branch libraries are maintained in the majority of the bureaus. About one-third of the books belonging to the Department Library are filed in the various bureau libraries.

The BUREAU OF BIOLOGICAL SURVEY, Dr. Edward W. Nelson, chief, room 207, studies the habits and ranges of wild birds and animals, with a view to the conservation of the economically useful or harmless forms and the control or destruction of those injurious to agriculture; conducts experiments in the farming of fur-bearing animals and for the improvement of Alaskan reindeer herds, and investigates the diseases to which these forms of wild life are subject when reared in captivity. Laws administered by this bureau relate to the maintenance of national reservations for big-game animals and birds, to the protection of migratory game and insectivorous birds and Alaskan land fur animals, and to importations of live wild animals and birds, and to interstate commerce in birds and game.

The general offices of the Biological Survey are on the second floor. For information, inquire at the office of the assistant to the chief, room 207; and for publications, ask at the office of the editor, room 203. Material kept in the different offices of the bureau relating to wild life is chiefly for purposes of technical study and comparison, and while no public exhibits are maintained, the study material will be shown to in-

terested visitors on request.

In the office of Dr. A. K. Fisher, in Charge of Economic Investigations, room 200, is stored a small collection of furs and tanned skins, comprising most of the native North American pelts used in the fur trade. Examples of all sorts of traps are on view, from the smallest for mice and shrews to the largest bear trap. Here may be seen types of the traps used by the Biological Survey in its operations for the control of predatory and other injurious animals, including the many forms of rodents. Other means of destroying injurious animals, such as by use of poisoned baits, and gas, will be explained to visitors.

In the office of Geo. A. Lawyer, Chief United States Game Warden, room 210, will be found mounted specimens of game and other birds, together with a quantity of beautiful aigrettes and bird of paradise plumes. The mounted birds and aigrettes were confiscated by Federal wardens enforcing the migratory bird treaty act, and the bird of paradise plumes were seized by customs authorities when attempts were made to smuggle them into the country, being later turned over to the Biological Survey for scientific and educational purposes.

In the last corridor on the second floor is a small framed collection of material relating to bird-banding, including samples of bands used by various foreign organizations and institutions, and standard bands employed by the Biological Survey in its studies of the distribution and migration of wild birds. This frame includes also maps showing unusual migrations of individual birds as learned from banding operations. Information regarding the distribution and migration of wild

animal life will be given on request in the office of E. A. Goldman, in Charge of Biological Investigations, room 226.

Another division of the Biological Survey, Food Habits Research, is in Building "F" (see p.39).

The BUREAU OF AGRICULTURAL ECONOMICS, Dr. H. C. Taylor, Chief, room 720, conducts investigations on the cost of production and marketing, farm organizations, farm financial relations, farm labor, agricultural history and geography, land economics and the problems of rural life. The bureau also investigates problems pertaining to marketing and distribution of farm products. It conducts market news services and food products inspection service, and collects crop statistics, gathers and collates general agricultural statistics, and issues crop reports and forecasts. It enforces United States cotton futures, grain standards, and standard container acts, and administers the United States warehouse act. The chief of this bureau acts also as liquidating officer for the wool section of the War Industries Board.

The administrative offices of the Bureau of Agricultural Economics are on the seventh floor. The offices of the Chief, Assistant Chief, Director of Marketing Research and Director of Information, and the general reception rooms are grouped together.

On this same floor, in room 711, will be found the headquarters of the Federal Market News Service, which covers the United States. A twelve-hour wire service is in constant touch with all of the important markets of the country.

Information on prices, receipts, movements and market conditions is transmitted over 3,300 miles of wire from 32 branch offices and is disseminated to the public through the use of these same wires and by radio.

In room 728, the entrance to the Division of Livestock, Meats and Wool, may be found charts showing the wholesale and retail cuts of beef, veal, lamb, and pork. Colored transparencies depicting market grades of cattle, calves, hogs and sheep are also on display. On a large blackboard in the east corridor of the seventh floor are posted daily prices, supply and market conditions of livestock at Chicago, Kansas City, Omaha, and St. Louis.

On the eighth floor in room 823, official cotton standards of the United States are assembled and given final examination. In room 821, standards are prepared for photographing, and are wrapped and sealed for shipment.

The wool grades and exhibits showing the important processes of manufacture of the woolen, French and worsted systems are displayed in room 801. Types of wool produced in all parts of the country, may also be seen in this room.

The Photographic Laboratory, containing over 28,000 negatives on marketing, farm management, and crop reporting subjects is located in room 629. Graphic statistics will be found on the sixth floor.

The fifth floor houses the Fruit and Vegetable Division. In room 514, contain-

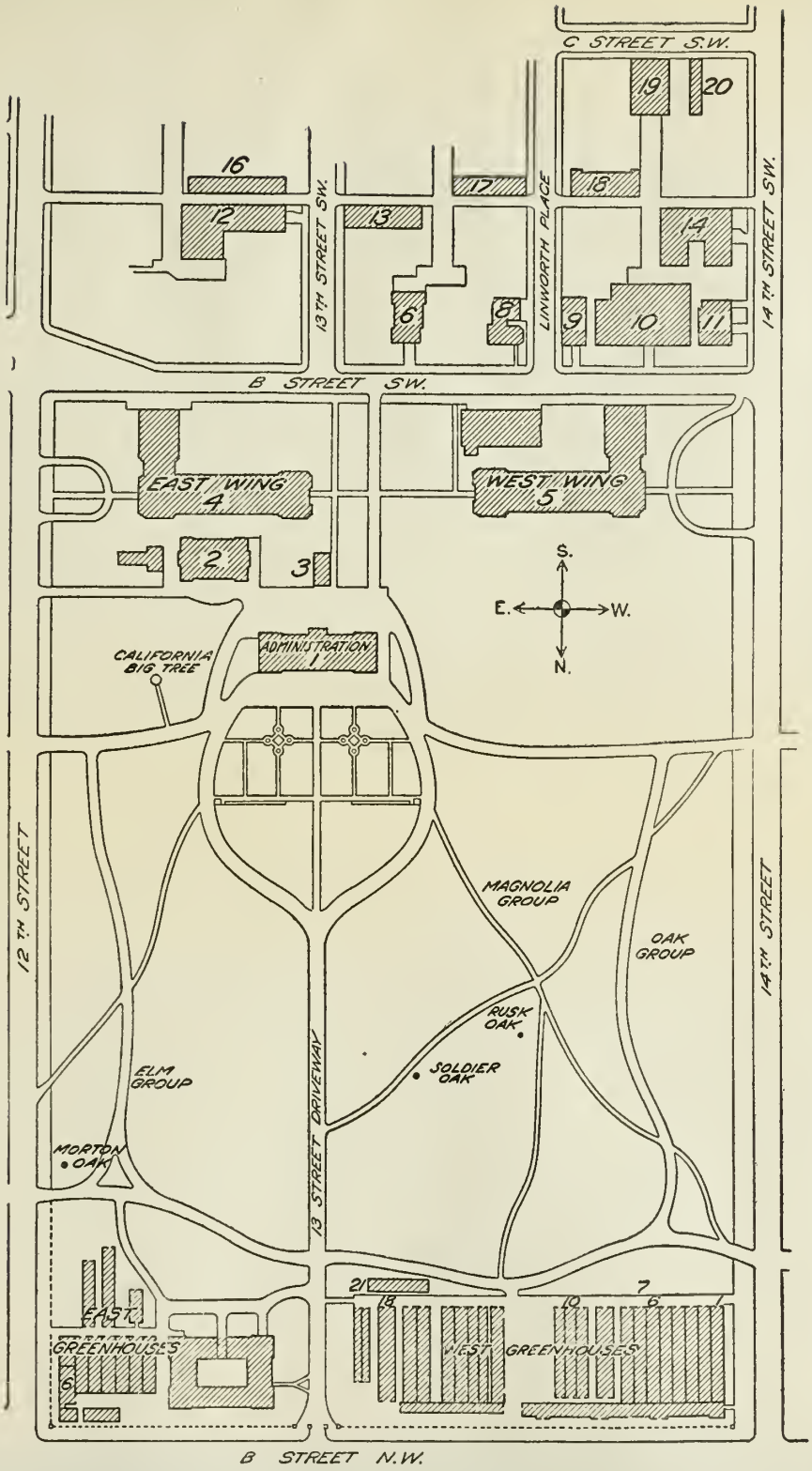
ers are tested to determine whether they conform to the United States standard container act. Photographs showing various phases of standardization of fruits and vegetables and containers in which they are packed may be seen in room 516.

On the fourth floor is the room 411, from which Government crop reports are released and the offices of the grain division.

This room is equipped with telephone and telegraph instruments connected with all the important markets. Crop reports, when ready for release, are laid on a table in the center of the room, and on the stroke of the given hour newspaper correspondents who have gathered for the release get a copy, rush to assigned instruments and communicate the information to markets throughout the country.

The Crop Reporting Board rooms are in the building at 200 14th St. SW., room 305 (No. 11 on the map), and may be reached by crossing the bridge leading from the third floor of the Bieber Building. Here the Government reports on the acreage, growing condition, forecasts, yield and production of the cereal, fiber, feed and other crops and periodical reports on increase and decrease in the number of livestock, etc., are prepared monthly by a corps of statisticians and computers shut off behind locked doors from communication with the outside world.

The Grain Division of the Bureau of Agricultural Economics has a small exhibit, in room 405, of the Bieber Building. Here in type trays exhibits of shelled corn, wheat, oats, rye, grain



NOT INCLUDED ON MAP

WEATHER BUREAU
24th & M Streets N.W.

FOREST SERVICE
930 F Street N.W.

BUREAU OF PUBLIC ROADS
514 14th Street N.W.

BUILDING "F"
7th & B Streets N.W.

FIXED NITROGEN LABORATORY
American University

EXPLANATION

1 ADMINISTRATION BLDG.
2 ENTOMOLOGY BLDG.
3 PRESS SERVICE
4 EAST WING
5 WEST WING
6 CEREAL INVESTIGATIONS
8 SOLICITORS OFFICE
9 B.A.I. { EDITORIAL / VIRUS SERUM CONTROL
10 BIEBER BLDG.
11 CROP ESTIMATES
12 CHEMISTRY
13 PUBLICATIONS
14 220 14TH ST.
16 { INSECTICIDE AND / FUNGICIDE BOARD
17 BRANCH OF PUBLICATIONS
18 { TOBACCO LABORATORY / GRAIN LABORATORY / FOREST PATHOLOGY
19 MOTION PICTURES
20 EXPERIMENTAL MILL

THE GREENHOUSES

WEST GREENHOUSES
1 ACID SOIL PLANTS
6 TROPICAL ORNAMENTAL PLANTS
7 CACTUS HOUSE
10 ROSE HOUSE
18 CITRUS HOUSE
21 GRAPE HOUSE

EAST GREENHOUSES
6 PLANT INSPECTION

DEPARTMENT OF AGRICULTURE RESERVATION AND IMMEDIATE VICINITY

sorghums, shelled rice, barley, rough rice, ground rice, and flax seed will be found. Grain grading apparatus, including that used in terminal market elevators, is displayed, and grain cleaning on the farms is illustrated.

The Library of the Bureau of Agricultural Economics, which probably contains the largest collection of agricultural statistics in the United States, is located in the west corridor of the third floor. The remainder of the third floor is used by the Division of Statistical and Historical Research. Here may be found a large collection of material on the history of American Agriculture.

An experimental mill, (see p.35), is also a part of the Bureau of Agricultural Economics. The Division of Farm Management and Cost of Production of this bureau is located at 7th and B Sts. NW., Building "C" Wing 6, room 357. (See also Tobacco Laboratory, p.34; Hay Laboratory p.48).

216 THIRTEENTH STREET SOUTHWEST

Bureau of Chemistry.

The building at 216 13th St. SW. (No. 12 on the map), contains the major portion of the work of the BUREAU OF CHEMISTRY. This bureau, Dr. Charles A. Browne, acting chief, enforces the Food and Drugs Act, investigates problems of agricultural chemistry and works out methods for the utilization of agricultural products. For information as to special laboratories and offices, inquire at the information desk on the left as you go into the building. Publications of the bureau can be obtained through the clerk in charge of the information desk.

The work of the Bureau of Chemistry is carried on in a series of special laboratories. Samples and apparatus in the laboratories are primarily for scientific study, and while no public exhibits are maintained, any of the material will be shown to visitors upon request.

The leather and paper laboratory occupies most of the first floor. Devices for making every possible test of leather, tanning materials, and paper fabrics can be seen there as well as equipment for wool scouring waste investigations. The first constant humidity room in the country, if not in the world, is located here. It is used in connection with all physical tests of the materials studied.

Three laboratories and the library are to be found on the second floor. Modern baking apparatus such as a dough mixer, fermentation cabinet, machine for testing the volume of a loaf, egg beaters, mixers and similar equipment may be seen in the baking laboratory, room 212.

In the protein laboratory, room 205, two or three hundred albino rats are being used for experiments which test the nutritive value of the proteins, of various seeds, grains and other feed stuffs. There is a collection of charts and photographs showing the effect of a diet deficient in protein and vitamins. Specimens of pure proteins isolated from food materials will be shown on request. Chemical investigations of the proteins of feed stuffs are made for the purpose of developing information for more economical and effective use of feeds.

The water and beverage laboratory, room 206, contains apparatus for determining the radio activ-

ity of mineral waters, an experimental bottling plant, and an exhibit of labels of mineral waters before and after the passage of the Food and Drugs Act.

Research work with tea, sugar, and oils and fats is conducted on the third floor. The eight Government standards by which teas are judged can be seen on this floor, room 304. Here are also samples of cassina, the American tea, with which experiments are being made by this bureau, in various stages of preparation.

The purity of chemicals and the acceptability of chemical apparatus is certified to in the analytical reagents laboratory, room 312. This laboratory also contains a collection of rare chemicals, made by members of the staff. The sirup work of the bureau is carried on in the carbohydrates laboratory, room 310-A. In the polariscope room of the laboratory, sugar solutions are tested to show their purity and sugar content. A centrifuge may be seen as well as a Steffen equipment for desugarizing molasses, and an exhibit of rare sugars.

In the Oil, Fat and Wax laboratory, room 310, a collection of animal and vegetable oils has been arranged in cabinets. Many rare oils are included in this collection, as well as the special apparatus used in oil production.

The dust explosion work is located on the fifth floor. This is an important feature of the Bureau of Chemistry, and one which has received much attention of late years. Dust explosions in grain elevators,

starch factories, sugar refineries, flour mills, and chocolate plants cost the country millions of dollars each year. In this laboratory methods of the prevention and control of fire are being studied. Tests are being carried on to determine explosive mixtures of dust and air, ignition temperatures and related subjects. (See also p.36).

The microchemical laboratory, room 503, has a collection of authentic samples of foods, drugs, insecticides, fibers used in textiles, photo-micrographic apparatus, and photo-micrographs.

A small collection of plaster models of crystals can be seen in the crystalography laboratory, room 515. Seedlings of various crops being grown in nutrient solutions may be seen in the crop chemistry laboratory. In the microchemical laboratory, room 510, there is a large collection of authentic samples of foods, drugs, insecticides and fungicides, cattle foods, fibers, food and drug adulterants and substitutes.

Specimens of caffein first obtained in quantity from cassina, leaves and pulp of coffee, samples of the natural oils of some fruits, may be seen in the phytochemical laboratories, room 511.

On the sixth floor of this building, in the microbiological laboratory, room 610, exhibits of some canned goods, of spoiled canned goods, and of sauerkraut and pickle experiments in progress can be seen. Investigations are underway on the microorganisms that cause food spoilage.

A collection of many different varieties of beans, related seeds, and one of crude drugs will be shown on request in room 612. (See also Building "F" p.38), and Arlington Farm, (p.46).

The color investigations laboratory is at the Arlington Farm.

215 THIRTEENTH STREET SOUTHWEST

Office of Publications

The OFFICE OF PUBLICATIONS, L. J. Haynes, chief, is located at 215 13th St. SW. (No. 13 on the map). This division edits, illustrates, prints, and distributes all publications of the department. A large duplicating section for the use of all the other bureaus of the department is maintained in this division. During the past fiscal year approximately 44,000,000 copies of publications were distributed. An average of more than 2,500 letters per day requesting publications are received and handled by this division, though the actual mailing of the publications is done at the Government Printing Office. Persons desiring single copies of publications may secure them at the information desk in the office of the administrative assistant on the first floor.

220 FOURTEENTH STREET SOUTHWEST

Bureau of Home Economics
Office of Experiment Stations
Extension Service
Specialist in States Relations Work
Division of Agricultural Instruction
Horticultural and Pomological Investigations

The building at 220 14th St. SW. (No. 14 on the map), houses the Bureau of Home Economics, Office of Experiment Stations, Extension Service, Specialist in States Relations Work, Division of Agricultural Instruction, and Office of Horticultural and Pomological Investigations (which is a part of the Bureau of Plant Industry).

The BUREAU OF HOME ECONOMICS, of which Dr. Louise Stanley is chief, occupies the front rooms of the second floor. This bureau supersedes the former Office of Home Economics and is organized to conduct research on such subjects as foods and nutrition, clothing and textiles, economic conditions in homes by which standards of living can be determined, and other problems of importance to the home. The bulletins, charts, and other publications of the bureau will be shown to visitors on request. Laboratories of the bureau are located in the basement of the East Wing and the apparatus and experiments under way will be gladly explained to visitors.

The OFFICE OF EXPERIMENT STATIONS, Dr. E. W. Allen, chief, occupies rooms on the fifth and sixth floors. This office exercises the advisory and supervisory functions provided for in the Federal acts making ap-

propriations for the State experiment stations, collects and disseminates information regarding the organization and work of such institutions, and publishes a technical review of the scientific literature of the world relating to agriculture, in Experiment Station Record. It also, through its division of insular stations, supervises the work of experiment stations maintained by the department in Alaska, Hawaii, Porto Rico, Guam, and the Virgin Islands. The office of the chief is room 512 and of the editor of Experiment Station Record room 516. Information regarding the insular stations and copies of their publications may be obtained in room 502. In the library of the office, room 612, are files, practically complete, of the publications issued by the State agricultural experiment stations, by the State extension services as far as it has been possible to obtain them, and by the department.

The EXTENSION SERVICE occupies rooms on the first, second, third and sixth floors. The office of the Director of Extension Work, C. W. Warburton, is in room 318 on the third floor. This service represents the department in its relations with the State agricultural colleges in cooperative extension work in agriculture and home economics, acts as an agency for coordinating the extension work of the several bureaus of the department, supervises the production and distribution of motion pictures (see p.34), and the preparation, shipment and display of agricultural exhibits at fairs and expositions throughout the country, (see p.37) and aids in improving the teaching of agriculture in the rural schools.

The OFFICE OF COOPERATIVE EXTENSION WORK, Dr. C. B. Smith, chief, occupies rooms on the

first, second, third and sixth floors. It cooperates with the extension divisions of the State agricultural colleges in their plans and expenditures for extension work in agriculture and home economics under the Smith-Lever Act, acts as an agency for coordinating the extension work of the several bureaus of the department with similar work carried on by the agricultural colleges, and carries on work on subjects relating to agriculture, home economics, and rural life generally through practical demonstrations and instruction under the supervision of State, district, and county extension agents working through organizations of farm men and women and boys' and girls' clubs. The office maintains a photographic reference file of approximately 20,000 sujects on agriculture and home economics, and cooperates with other bureaus in the production and distribution of lantern slides for extension workers. Information regarding the organization methods and progress of extension work in this and foreign countries is collected and disseminated. Information regarding this work may be obtained in room 109.

Dr. A. C. True, SPECIALIST IN STATES RELATIONS WORK, is attached to the Office of the Secretary as counselor on matters connected with the relations of the department with the State agricultural colleges and extension services. He also has general supervision of the work of the department relating to agricultural education and is preparing a history of agricultural education, research, and extension work in the United States. He is the representative of the department on the Federal Council of Citizenship Training. General information regarding this work may be obtained in room 507.

The DIVISION OF AGRICULTURAL INSTRUCTION, room 613, aids in improving agricultural instruction in rural schools by furnishing the schools with up-to-date information and properly organized subject matter, and illustrative material relating to agriculture.

The OFFICE OF HORTICULTURAL AND POMOLOGICAL INVESTIGATIONS, of the BUREAU OF PLANT INDUSTRY, maintains a large collection of material related to its work. For information, inquiry should be made at the main office, room 401. Permission to examine or make special studies of the paintings should be obtained from Dr. L. C. Corbett, room 406.

One of the most interesting things in the building is the collection of fruit and vegetable models, paintings, and specimens of nuts, fruits and vegetable products, of the Office of Horticultural and Pomological Investigations. This is displayed in room 413 on the left of elevator as you get out on the fourth floor. It contains replicas of authentic varieties, and in addition to the show cases full of wax models and of nuts, there are a number of paintings which are used for purposes of identification. Many of these models and paintings represent type specimens which are to pomology what a "type specimen" of a plant species is to a botanist. The library, which adjoins this museum, has the largest collection of fruits and vegetable trade catalogues in the world, and also a collection of paintings of actual specimens of fruits and vegetables which has accumulated over a period of 25 years and which now consists of about 15,000 paintings. On the third floor of the building, room 308, there is one of the largest collections of bean seeds in the world. It is a reference collection and

is used for identifying varieties. D. N. Shoemaker is in charge. It includes more bean seeds than any other kind, but there are also many cases of peas and corn seeds.

The photographic collections, also on the third floor, may be seen by permission. They consist of photographs relating to horticulture and pomology from all over the world. Twenty-five or thirty thousand pictures are concerned with fruit, about the same number with vegetable production, and 5,000 to 8,000 are connected with landscape gardening.

GRAHAM BUILDING

Office of Foreign Seed and Plant Introduction

The Graham Building, 14th and E Sts. NW., contains the OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION of the BUREAU OF PLANT INDUSTRY, which brings in new and useful plants from foreign countries and maintains gardens for their propagation in various parts of the country. From these gardens the experimental plants are sent to the State experiment stations and special experimenters of the country.

Working files of photographs, herbarium specimens, and scientific data available to bona fide experimenters are housed here, but there are no exhibits of general popular interest. If you have the facilities required for any special experimenting with these new food, forage and otherwise useful plants, a request for plant material should be made in writing and consideration will be given such requests.

220 THIRTEENTH STREET SOUTHWEST

The Insecticide and Fungicide Board

The administrative work of the INSECTICIDE AND FUNGICIDE BOARD is carried on in the Olive Building, 220 13th St. SW., (No. 16 on the map). The board, composed of four members (Dr. J. K. Haywood, chairman; Dr. M. B. Waite, Dr. A. L. Quaintance, and Dr. J. A. Emery, of the Bureaus of Chemistry, Plant Industry, Entomology, and Animal Industry, respectively) assists the Secretary of Agriculture in the enforcement of the Insecticide Act of 1910. The principal activities of this board are chemical, bacteriological, and microscopical examination of commercial insecticides and fungicides, and the testing of such products for efficiency, and possible injury. No exhiblts of special interest can be seen in the Olive Building, but the Assistant to the Chairman of the board, J. G. Shibley, room 23, will be glad to direct visitors to any branch of the board work in which they may be interested.

220 LINWORTH PLACE SOUTHWEST

This building (No. 17 on the map) contains a part of the Office of Publications, all of the addressing and duplicating, multigraphing and mimeographing, and the illustrations section. No. exhibits of any kind are to be seen here.

221 LINWORTH PLACE SOUTHWEST

Two bureaus have laboratories in the building at 221 Linworth Place, SW. (No. 18 on the map). The grain chemical research and the tobacco standardization laboratories of the Bureau

of Agricultural Economics are there, and the Forest Pathology laboratory of the Bureau of Plant Industry occupies the third floor. In the grain chemical research laboratory, room 201, tests are made for oil content of flax, natural color of oats and barley, gluten content of wheat, effect of heat damage, acidity in corn, and moisture in grain.

The tobacco standardization laboratory also is on the second floor of the building. It is equipped with conditioning apparatus to control temperature and humidity in the storage rooms where tobacco samples from various parts of the country are being studied with a view to establishing tobacco standards. In an adjoining room tobacco samples are inspected, assorted and classified.

The Forest Pathology laboratory of the Bureau of Plant Industry is on the third floor. Specimens of fungi which cause tree diseases, and the decay of timber, as well as specimens of tree surgery, will be shown to visitors on request.

1363 C STREET SOUTHWEST

Motion Pictures

The OFFICE OF MOTION PICTURES, (No. 19 on the map), makes and distributes motion pictures for all bureaus of the department. The building consists of an office, projection room, film vaults, studio, and a complete laboratory equipped to perform every step in the making and handling of motion pictures. A staff of trained scenario writers, cameramen, and laboratory workers is maintained for this purpose, and pictures are made of subjects covering the whole range of the department's work.

During the past fiscal year 33 motion pictures were completed, and work was begun on 28 additional films. At the present time the department has films on more than 180 subjects totaling nearly 1,300 reels. Visitors who are especially interested in the subject will be shown through upon application. Expositions of films in the building may be arranged for parties of some size.

1369 C STREET SOUTHWEST

At 1369 C St. SW., (No. 20 on the map), there is a little mill and bakery which is a part of the Bureau of Agricultural Economics. Mill tests with wheat of varying moisture content and containing foreign material and heat damaged kernels are made here. In addition there is a small bakery where baking tests of flour of varying moisture and gluten content are made. Milling machines, including grain cleaners, sackers, bowls and sievers can be seen in this laboratory.

BUILDING "F" 7th AND B STREETS SOUTHWEST

Nine bureaus or offices have branches in "F" Building which is one of the temporary structures built during the war emergency. This building is not shown on the map. It may be reached by taking a Capital Traction Car marked 7th and Wharves and getting off at 7th and B Sts., or by walking through the department and museum grounds in a northeasterly direction. It is about three-eighths of a mile from the main building close to the National Museum and just behind the Center Market.

"F" Building consists of a head building and seven wings. The room numbers which are preceded by the letter "H" are in the head building. Those

in the wings are indicated by the number of the Wing followed by a dash and the room number. Wing 7 is nearest to Seventh Street. Some other Government departments have space in this building but most of it is given over to the work of the Department of Agriculture as follows:

Chemistry:

Dust Explosions, H 120 (D. J. Price, in Charge).

Animal Industry:

Meat Inspection, H 222 (Dr. R. P. Steddom, in Charge).
Animal Husbandry, Wing 4 -- 223 (E. W. Sheets, in Charge).
Tuberculosis Quarantine, H 154 (Dr. J. A. Kiernan in Charge).
Field Inspection, Wing 3 -- 204 (Dr. A. W. Miller, in Charge).

Plant Industry:

Plant Disease Survey, H. 262, (F. R. Lyman, in Charge).
Forage Crop Investigations, Wing 7, 211 (C. V. Piper, in Charge).
Fiber Investigations, Wing 6 -- 209-211 (Dr. L. H. Dewey, in Charge).
Congressional Seed Distribution Correspondence, H 142, (O. F. Jones, in Charge).
Blister Rust Control, Wing 6 -- 217 (Dr. S. B. Detwiler) in Charge).

Agricultural Economics:

Division of Dairy and Poultry Products, H 204 (R. V. Potts, in Charge).

Biological Survey:

Food Habits Research, Wing 1, room 222, (W. L. McAtee, in Charge).

Entomology:

Stored Products Insects, Wing 6, room 225 (Dr. E. A. Back, in Charge).

Soils:

Soils Survey and Map Drafting, Wing 7, room 311, (G. W. Bauman, in Charge).

Federal Horticultural Board:

Port Inspection, H 340 (E. R. Sasscer, in Charge).
Foreign Plant Quarantine, Wing 7, room 126 (R. Kent Beattie, in Charge).

Office of Exhibits, Wing 5 -- 227 (J. W. Hiscox, in Charge).

A number of these offices maintain no exhibitions of any kind, but information related to the work can be obtained by inquiring at the office of the person in charge.

On the first floor can be seen an exhibit of the work of the Bureau of Chemistry with Dust Explosions. Inquire at room H 120. The exhibit has been arranged in booth form and consists of a

number of illustrated panels showing explosions in grain elevators, starch factories, sugar refineries, flour mills, and chocolate plants, also explosions in threshing machines, during threshing operations, and methods of prevention of cotton gin fires and methods of control. A steremotograph has been arranged to accompany this booth with 50 illustrated views of industrial plants, threshing machines, and cotton gins that have been wrecked or damaged by explosion or fire.

In room 7 -- 126, which is also on the first floor, is the office which enforces the foreign plant quarantine of the department and regulates the entrance into the United States of foreign plants and plant products. There is also maintained a large index of plant diseases of the world, and the records in regard to plant importations. Visitors interested in the exclusion of foreign plant pests or in securing permits for the entry of plants, cotton and other plant products, or in information in regard to such importation, should call here.

The headquarters of the Office of Exhibits are in Wing 5 on the second floor, room 227. This office has charge of the preparation and handling of the exhibition material for the entire department. The actual work of preparing panels, models, and other forms of exhibition material is done in the art section, entrance room 5 -- 219. Exhibits not in use are stored in a warehouse in Alexandria, Va. This can be visited only by special permission. If interested apply at Mr. Hiscox's office.

Specimens of practically all the commercial fibers except cotton have been collected in rooms 209 and 211 as a part of the work of fiber plant investigation of the Bureau of Plant Industry.

Room 217 of this Wing is the headquarters of the blister rust control work. Blister rust specimens, charts, maps and photographs illustrating various phases of control work can be seen here. Specimens of infected white pine are arranged around the room. Other material is displayed on wall racks. In addition there is a box and panel exhibit with colored illustration of the disease, mounted specimens of diseased pine and Ribes, available publications, and a map showing distribution of the disease. Interested visitors should ask for R. G. Pierce in room 6 -- 208.

The Stored Products Insects work of the Bureau of Entomology is located in this Wing.

The Food Habits Research Division of the Biological Survey is also on the second floor and may be found in Wing 1 -- room 218. An exhibit of wood showing the defects due to sapsuckers and miscellaneous material accumulated to show damage done by birds can be seen, as well as some exhibits showing the studies of stomach contents of birds which are being made to show the economic value of birds.

Information regarding insects which may be introduced, as well as insects that have been introduced and intercepted, may be obtained in room 340, on the third floor. E. R. Sasscer, of the Federal Horticultural Board, is in charge. There is a small collection of contraband material and of various insects that have been or may later be the subject of quarantines.

24TH AND M STREETS NORTHWEST

Weather Bureau

The WEATHER BUREAU, Prof. C. F. Marvin, chief, is located at 24th and M Sts. NW. It can be reached by taking the Pennsylvania Avenue car marked Georgetown, to 24th St., and walking a block north.

The Weather Bureau conducts meteorological and climatological investigations, issues weather maps and river and flood warnings and handles all work relating to the weather.

Visitors are asked to come to the office of the chief clerk, room 17, second floor, main building, where arrangements will be made to conduct them to the points of interest. Much of the work of the Weather Bureau is highly technical and while the work done in observatories will be explained generally, it will be necessary that special arrangements be made to visit them.

The Washington office of this bureau is the central office for the weather service of the entire country. The supervision of all the field activities connected with forecasting, river and flood work, climatology, aerology, marine meteorology, solar radiation, seismological, and printing work is centralized in Washington. In the shops and laboratories maintained, instruments used in making weather and river observations in the 200 branches are repaired and tested, and publication of all weather data is supervised from this office.

In the observatory on the third floor instruments used in recording the direction and velocity of the wind, air pressure and sunshine can be

seen. Rain and snowfall are measured by means of instruments on the roof. Every afternoon at three o'clock small balloons are liberated from the roof for observing the velocity and direction of the upper air currents.

In the forecast map room, which is on the first floor of the building, the daily weather maps are prepared from data received from 200 offices throughout the United States. Every day at 8 a. m. and 8 p. m. reports on the weather at these different stations are received in code. Then they are decoded and recorded on form maps. While this work is in progress and the forecasts are being made no one is admitted to the room, as the work must be done with the greatest expedition to be of value.

This short survey will give only a general picture of the work of the Weather Bureau. Visitors who are interested in special lines of work will be referred to the offices in charge of them, upon request.

This bureau possesses the best meteorological library in the world, consisting of 40,000 volumes covering all phases of the subject. It is on the first floor of the main building. The bureau also maintains a printing plant for the prompt dissemination of its weather reports, forecasts and other information.

930 F STREET NORTHWEST

Forest Service

The FOREST SERVICE occupies the Atlantic Building, 930 F St. NW. The main activities

of this bureau are: (1) the protection of existing national forests and the administration of their current business; (2) the development and improvement of the national forests as Federal property; (3) the increase and conservation of the national timber supply. Col. W. B. Greeley, the forester, is located in room 706. E. A. Sherman, associate forester, room 708, is in charge during the forester's absence.

Inquiry for desired publications may be made in room 509; for photographs illustrating national forest work, room 216; for material to be used in articles for newspapers and magazines, room 718; for information and material for use in schools, room 717; for exhibits and motion pictures, room 516; for maps, room 403. The library is located in room 218. Inquiries concerning purchases, supplies, and property may be made in room 110. Records pertaining to the purchase of lands for eastern national forests are kept in room 711. The Office of Maintenance, room 110, will direct inquirers on any other problems to the office dealing directly with the subject.

There is also located in the Atlantic Building the headquarters of one of the eight field districts, known as the Eastern District. F. W. Reed, district forester, is in room 304. The object of a national forest district is to administer, protect, develop, improve, and maintain the national forests; to promote the full use of their resources and at the same time prevent waste and preserve the forest cover on the watersheds within the forests. Under this district is a legal department, with A. H. McConville, room 210, in charge. Jas. E. Scott, room 309, is in

charge of information for the district.

515 FOURTEENTH STREET NORTHWEST

Bureau of Public Roads

This bureau is located in the Willard Building, opposite the Willard Hotel and just above Pennsylvania Avenue. Thos. H. MacDonald is chief of the bureau, which is charged with the administration of Federal aid to the States in road construction.

Visitors who are concerned with administrative matters should call at room 507, Office of the Chief, and those seeking general information on the work of the bureau, publications and educational material should call at the editorial office, room 801.

While nothing in the nature of an exhibit is maintained in the building, there are several things of interest to those interested in road work and which will gladly be shown to visitors.

In the basement and on the first floor is located a complete laboratory for testing nonbituminous road materials, both routine and research work. To inspect this work apply at room 104. Here and at the office of the chief of the Division of Tests, room 810, arrangements may be made for visiting the major research projects of the bureau located at the Arlington Experimental Farm, when transportation facilities are available.

The bureau has occasion to do a great deal of statistical work, keeping records of thousands of road projects and making available cost data of all kinds and reports on the status of Federal

aid. From time to time great masses of statistics on road status and revenue, traffic censuses and economic investigations must be tabulated, summarized and put in shape for publication. By the aid of an ingenious system of card punching and an automatic calculating machine a small force handles this work which would be almost impossible using old methods. Those interested in statistical methods should call at room 306.

On the fourth floor, room 404, is a large collection of photographic prints and lantern slides illustrating all phases of road work, which is open to the inspection of visitors.

The offices of the district engineer having charge of Federal aid road work in Ohio, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, and North Carolina, are located on the fifth floor. Information on administrative matters pertaining to these particular States can be obtained in room 506.

Tests and research work on bituminous materials for road construction are conducted in the laboratory on the eighth floor. Arrangements to visit this laboratory can be made in room 805.

The Division of Agricultural Engineering of the bureau is located at 1418 Pennsylvania Avenue, a few doors below Poli's Theatre. This division handles problems relating to farm irrigation, drainage, building, and machinery. The research and investigational work from its nature has to be conducted outside of Washington. Visitors desiring to discuss problems relating to the above subjects should call at room 202 on the second floor.

AMERICAN UNIVERSITY BUILDINGS

Fixed Nitrogen Research Laboratory

The Fixed Nitrogen Research Laboratory, Dr. F. G. Cottrell in charge, makes investigations on the fixation and utilization of atmospheric nitrogen to determine the best, cheapest and most suitable means for the production of nitrates and other nitrogen compounds for use as fertilizers, explosives and industrial purposes.

This laboratory is housed in the buildings of the American University located at Massachusetts and Nebraska Avenues, NW., Washington, D. C. An hourly trolley service from the city is maintained. Cars marked Mass. and Western Aves., can be taken at about five minutes before the hour at 17th and H Sts. NW. To go by automobile, follow Massachusetts Avenue, crossing Wisconsin Avenue and continuing to Nebraska Avenue, where a left turn brings you to the gate.

The laboratory is divided into the Utilization and Cyanamide Section, the Ammonia Synthesis Section, the Arc Section, the Bureau of Soils Section, the Administrative Offices and Shops.

Most of the work of the laboratory is highly technical. It will be explained, however, on special request. It is advisable to telephone H. M. Frampton, the business manager (Cleveland 1800) before visiting there. Visitors are required to register at the entrance gate before admission to the buildings.

IN THE VICINITY OF WASHINGTON

Arlington Farm

ARLINGTON FARM is the largest experiment station maintained by the department in the vicinity of Washington. It can be reached most easily by automobile, crossing the Alexandria bridge and following the military road opposite Arlington Cemetery for a distance of 2½ miles. The farm is a tract of some 400 acres, of which nearly 300 acres are used for the experimental work of the Bureau of Plant Industry. The Bureaus of Chemistry, Soils, Entomology, and Public Roads also conduct experiments there.

The rose test garden is carried on in cooperation with the American Rose Society. It is at its best in May and June, and at that time is well worth a visit. The hardy chrysanthemum collection, in which varieties have been selected for outdoor use in the North, is in a part of the rose garden. A grass garden where bent and other fine turf grasses are being studied, is an interesting feature of the farm, as is the apple collection which includes over 400 varieties. Many other experiments concerned with the growing of plants are being carried on there by the Bureau of Plant Industry.

The Bureau of Chemistry has a color laboratory at Arlington Farm, Dr. J. A. Ambler in charge, where colors used in foods and the various phases of work with dyes can be seen. Exhibits of colors used in foods, of dyes used in photography and astronomy, of thymol, which is used in hookworm disease, of indigo and a spectrophotometer used in the absorption of light by dyes, form a part of the laboratory. Furfural, a chemical used in varnish,

is made from corn cobs in the furfural laboratory. The machine used in its manufacture will be shown and explained on request.

The Bureau of Public Roads has an outdoor laboratory for the study of road-building problems at Arlington Farm. Among the more important experiments being carried on are those to determine the effect of the impact of motor trucks on various kinds of pavement. A large and intricate machine, especially designed for the purpose, is used to deliver to the test pavement blows equivalent to the hammer-like pounding on actual pavements by motor trucks, and the behavior of the various types under this treatment is observed. At another place an army truck is kept in constant ope ation on a large circular track surfaced with bituminous concrete to study the cause of the "scrubbing-board" waves that often develop in pavements of this type. Another circular track 625 feet in diameter is surfaced with 62 different kinds and qualities of concrete, over which a rubber-tired apparatus which will approximate the effect of the rear wheels of a truck is automatically driven at a speed of 20 miles an hour. This apparatus is guided automatically day after day to determine the wearing properties of the various concrete mixtures used in the 62 sections. At another point pavement slabs have been laid on what appear to be a series of islands surrounded by ditches filled with water, and another series of exactly similar slabs are surrounded by dry ditches. The purpose of this experiment is to determine the effect of moisture on the supporting properties of the soil and to devise means of lessening the moisture content.

An interesting experiment is the test being made on a large model of a concrete skew-

arch bridge, such as one sees where a road crosses a stream at an oblique angle.

THE BETHESDA STATION

An experiment station for the study of animal diseases, a part of the Bureau of Animal Industry, is located at Bethesda, Md., seven miles northwest of Washington. It can be reached by automobile over the Rockville Pike, or by trolley over the Rockville line. The station comprises 115 acres. Experiments relating to tuberculosis, infections, abortion and other diseases of animals are being carried on. A letter of introduction will be given on request at the office of the chief of the bureau, in the East Wing. (See p.12).

THE BELTSVILLE STATION

The Bureau of Animal Industry also maintains a farm of 475 acres at Beltsville, Md., 14 miles northeast of Washington where both dairy and animal husbandry problems are being studied. This may be reached most conveniently by automobile on the Baltimore Pike. It may also be reached by trolley or by the B. & O. R. R. For particulars inquire of the office of the chief of the bureau, room 225, East Wing, or the Animal Husbandry Division, Building "F" room 419. (See p.36), or the Dairy Division, East Wing, room 24.

THE HAY LABORATORY AT 339 PENNSYLVANIA AVENUE

The hay standardization laboratory of the Bureau of Agricultural Economics is located at 339 Pennsylvania Avenue. Here can be seen work being done in establishing United States grades for hay.

BEE CULTURE LABORATORY
Somerset, Md.

The field laboratory and apiary of Bee Culture Investigations of the Bureau of Entomology are located at Somerset, Md., just beyond the District of Columbia line, northwest of Washington. Cars marked "Rockville," "Somerset," or "Edgemoor" all pass the street on which the laboratory is located. To go by automobile, follow Wisconsin Avenue, passing the District line to Somerset. The laboratory is on the right (north) side of Dorset Avenue about a quarter of a mile west of the Somerset gateway. The work of the laboratory is concerned with all phases of bee culture. If interested, ask for Dr. E. F. Phillips, the apiculturist in charge.

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